

Industrial design = ID

By Team 6

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Content

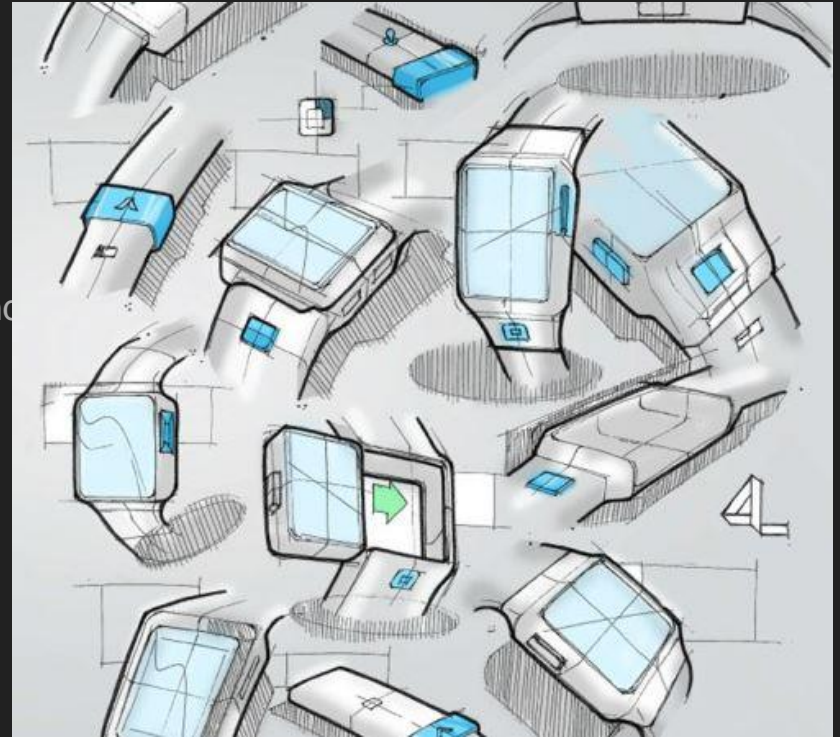
- What is industrial design?
- Impact of an industrial design
- Analysis industrial design
- Management of the ID process
- Assessing the quality of Industrial Design
- Summary

What is industrial design?

- Improving aspects of a pre-existing design
 - Aesthetics
 - Function
 - Manufacturing
- Analysing and applying requirements from customers, manufacturers
- Making a product easier to use, to produce and to look at

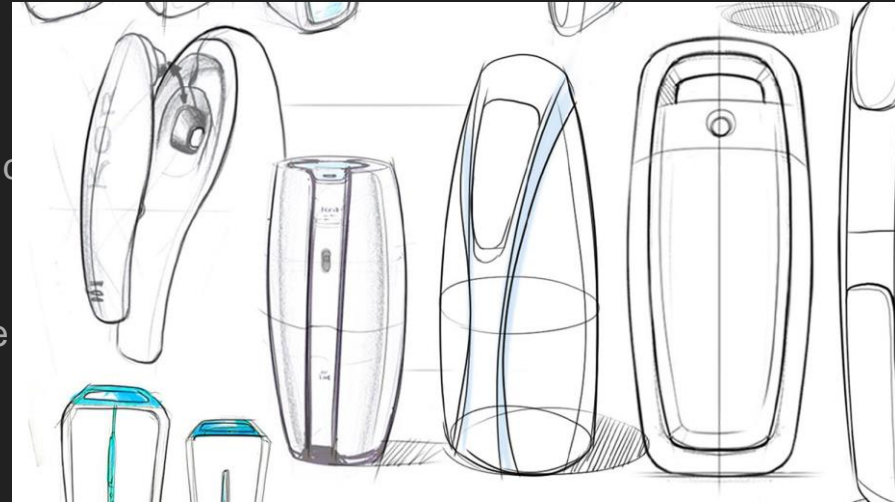
Goals of industrial design by Dieter Rams

1. A good design is innovative
2. A good design makes a product useful
3. A good design is aesthetic
4. A good design makes a product understandable
5. A good design is unobtrusive



Goals of industrial design by Dieter Rams

6. A good design is honest
7. A good design is long lasting
8. A good design is thorough down to the last detail
9. A good design is environmentally friendly
10. A good design is as little design as possible



Impact of Industrial design



Importance of Industrial Design

Ergonomics



Aesthetics



Ergonomics

Ease of use

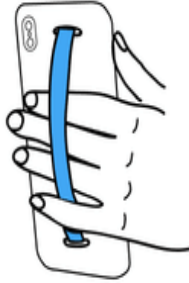
Ease of maintenance

Quantity of user interactions

Novelty of interactions

Safety

ELASTIC GRIP



RING GRIP



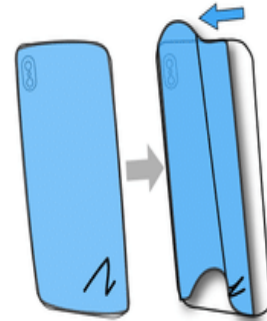
MAGNETIC RING



PERSONAL 3D PRINTED ERGONOMIC CASE



FOLDABLE PHONE BACK



Aesthetics

Visual product differentiation

Pride of ownership

Team motivation



Industrial Design and corporate identity

ID and corporate identity go hand in hand

ID designs a product's look which conveys corporate identity



Apple MacBook Pro

Futuristic

Fast

Sleek

Premium

Expensive



Light

Robust

Reliable

Versatile

Professional



Thinkpad 755CD (1994)



Budget of Industrial Design

Budget allocated for ID can vary

Quantity of user interaction

Product differentiation

Budget can be a fraction of total project cost



Is it worth the investment ?



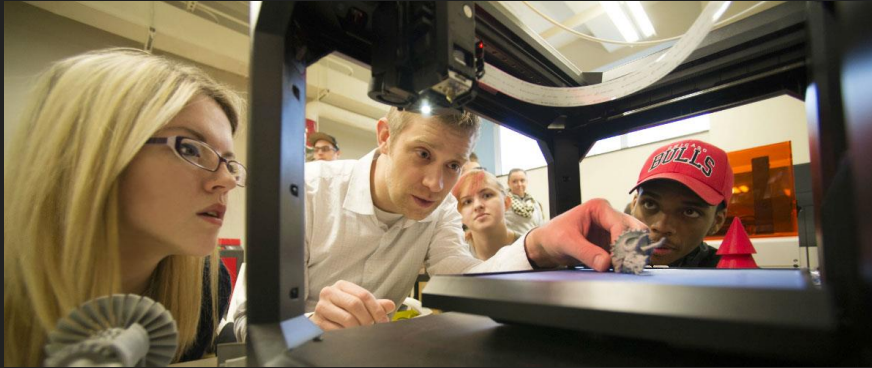
Cost ?

Time ?

Resources ?

Benefits ?

Direct Cost



- No of people
- Prototypes required / material
- Additional expenses



Direct Cost

- No of people
- Prototypes required / material
- Additional expenses



Manufacturing cost

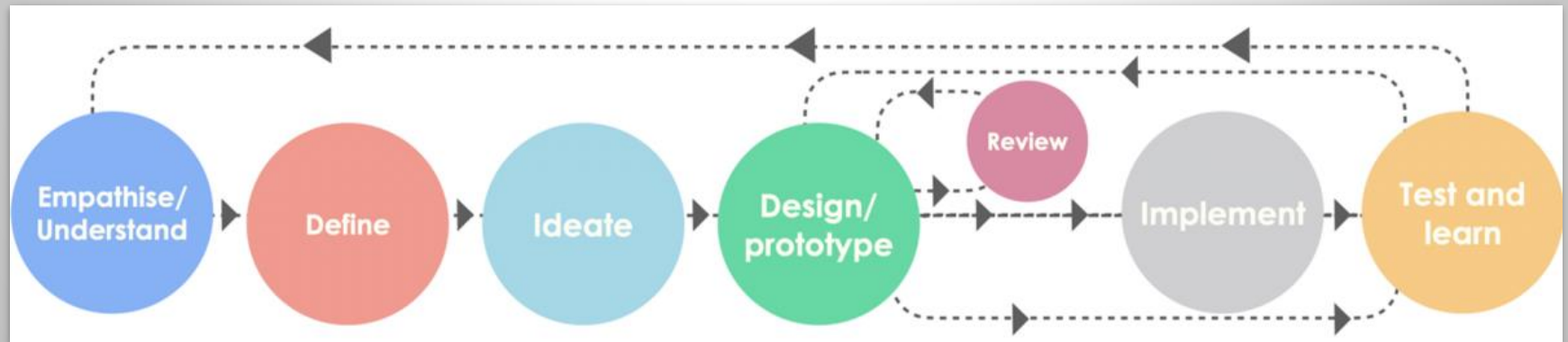


Time cost



The Industrial Design Process

1. Investigation of customer needs
2. Conceptualization
3. Preliminary refinement
4. Further refinement and final concept selection
5. Making control drawings and models
6. Coordination with engineering, manufacturing and external vendors



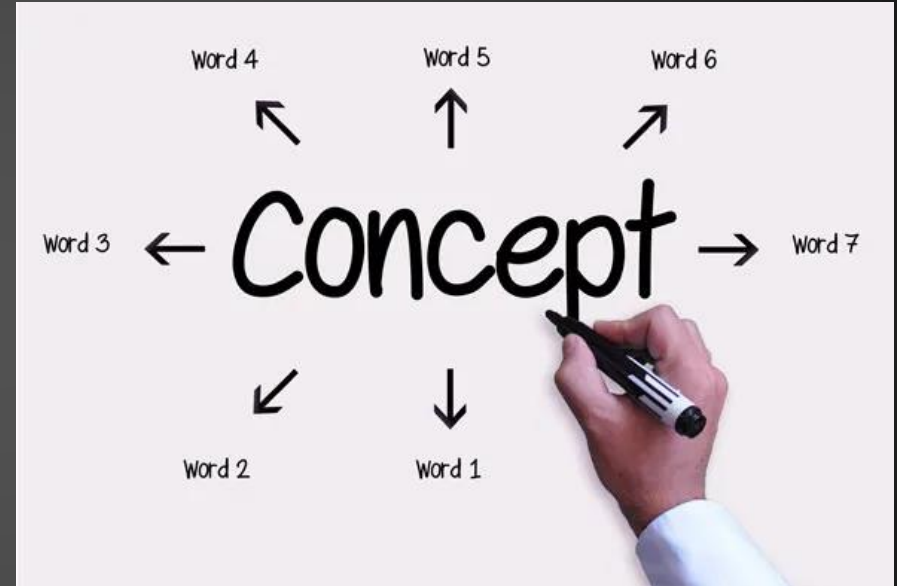
1. Investigation of customer needs

- Important to involve industrial designers
- Interviews, surveys, observing the competitors
- Better understanding of interactions between user and product



2. Conceptualization

- How to meet the customer needs
- Concept separated to subfunctions
- Evaluation according to customer needs, technical feasibility, cost and manufacturing considerations

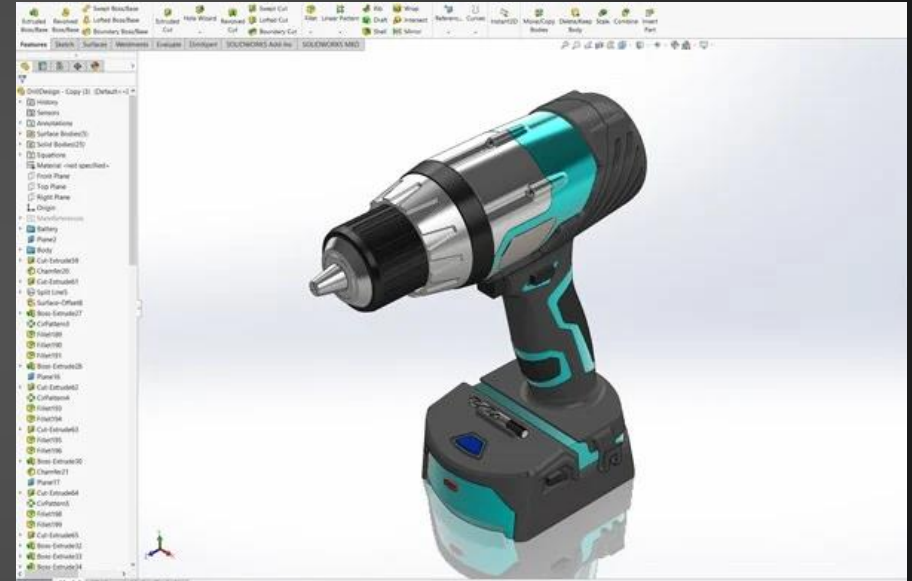


3. Preliminary refinement



- Models of the best evaluated concepts
- Full scale soft models
- More challenging shapes requires more models

4. Further refinement and final concept selection



- Hard models look realistic but are technically nonfunctional
- Renderings
- 3D CAD

5. Making control drawings and models

- Documenting functionality, features, sizes, colors, surface finishes and key dimensions
- Drawings ready to be handed to engineers

6. Coordination with engineering, manufacturing and external ventours

- Continuing close working with engineers, manufacturers and external vendors

Management of the Industrial Design Process



Capacity
Interface type
Transfer rate
Read/write speed



Size
Colour
Tires or not
Comfort
Is it ergonomic
Adjustable

Management of the Industrial Design Process



●
Automobile



Photo: Sarah Kobos

Technology-driven
Products

User-driven
Products

Technology
➤ Technical performance
Capacity
Interface type
Transfer rate
Read/write speed

Size
Tires or not
Comfort
Colour
Aesthetic appearance
Is it ergonomic
Adjustable

Management of the Industrial Design Process

Hard Disk Drive



Automobile



Wristwatch



Office chair



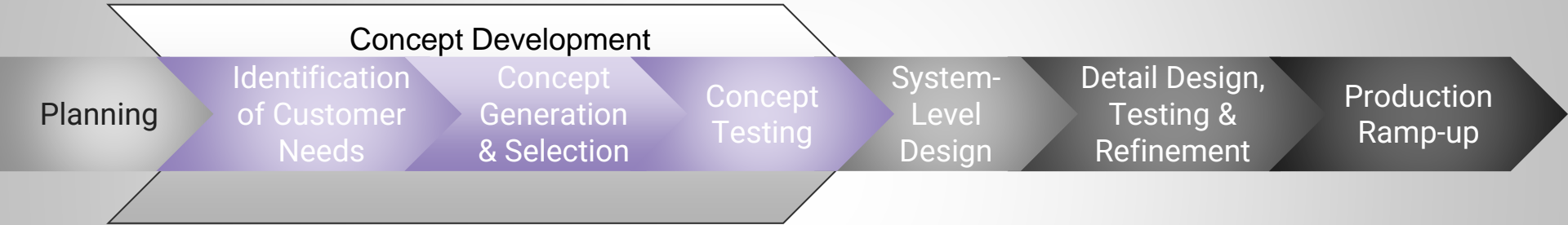
Technology-driven
Products

- Technology
- Technical performance

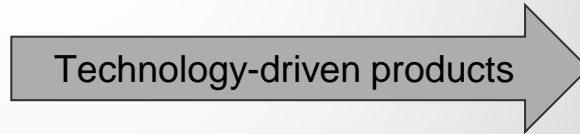
User-driven
Products

- Aesthetic appearance
 - User interface

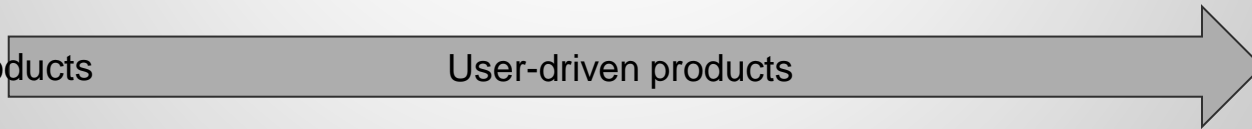
Timing of the Industrial Design involvement



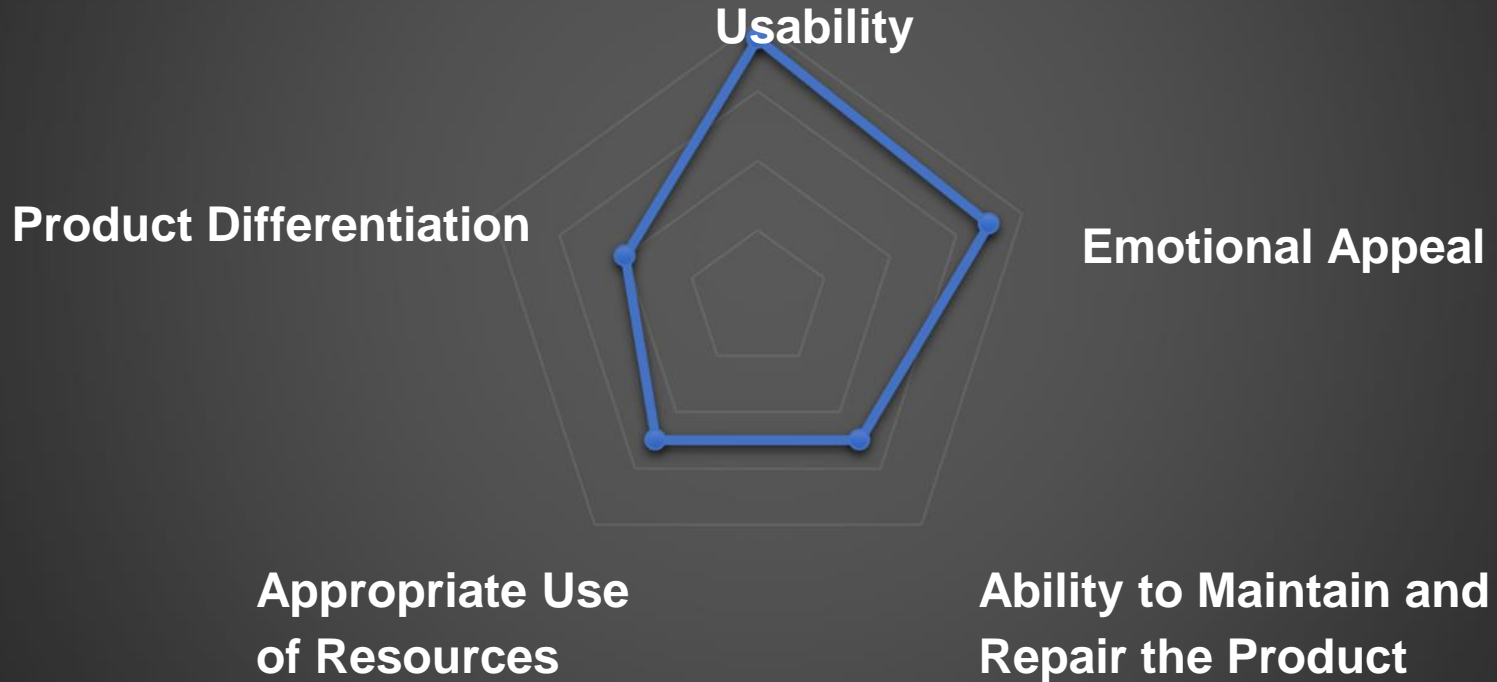
Technology-driven products



User-driven products



Assessing the quality of Industrial Design



Assessing the quality of Industrial Design

Usability



Assessing the quality of Industrial Design

Emotional Appeal



Assessing the quality of Industrial Design

Ability to Maintain and Repair the Product



Assessing the quality of Industrial Design

Appropriate Use of Resources



Assessing the quality of Industrial Design

Product Differentiation



Summary

- Industrial design is about improving the aesthetics, function and manufacturing of a product
- Ergonomics and Aesthetics are the two metrics to measure the importance of Industrial Design
- Industrial design process is embedded to the product development process (subprocess)
- Focus of the ID involvement varies
- Cost & Benefits of product design
- Assess the quality by formulating questions based on customer needs

Thank you!

Any questions?